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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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10/581,210

06/01/2006

Kenichiro Ota

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38834

7590

06/23/2009

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EXAMINER

KHOSRAVIANI, ARMAN

ART UNIT

PAPER NUMBER

2818

MAIL DATE

DELIVERY MODE

06/23/2009

PAPER

**Please find below and/or attached an Office communication concerning this application or proceeding.**

The time period for reply, if any, is set in the attached communication.

<b>Office Action Summary</b>	<b>Application No.</b> 10/581,210	<b>Applicant(s)</b> OTA ET AL.	
	<b>Examiner</b> Arman Khosraviani	<b>Art Unit</b> 2818	

**-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --**

**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on 15 June 2009.
- 2a) ☐ This action is **FINAL**.                      2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 1,2 and 6-9 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1,2 and 6-9 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All    b) ☐ Some \*    c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

- |  |   |
|--|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892)                     | 4) <input type="checkbox"/> Interview Summary (PTO-413)           |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____                                      |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08)          | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date _____  | 6) <input type="checkbox"/> Other: _____                          |

## **DETAILED ACTION**

### ***Continued Examination Under 37 CFR 1.114***

1. A request for continued examination under 37 CFR 1.114, including the fee set forth in 37 CFR 1.17(e), was filed in this application after final rejection. Since this application is eligible for continued examination under 37 CFR 1.114, and the fee set forth in 37 CFR 1.17(e) has been timely paid, the finality of the previous Office action has been withdrawn pursuant to 37 CFR 1.114. Applicant's submission filed on 6/15/2009 has been entered.

### ***Response to Arguments***

2. Applicant's arguments filed 5/13/2009 have been fully considered but they are not persuasive. Amended Independent claims 1, 6, and 8 recite the manner in which a claimed apparatus is intended to be employed and does not differentiate the claimed apparatus from a prior art apparatus satisfying the claimed structural limitations. Ex Parte Masham, 2 USPQ F.2d 1647 (1987).

3. In regards to distinguishing between battery or cell and fuel cell.

A battery or cell is a container filled with substances that produce an electric current by chemical action.

A fuel cell is an electrochemical conversion device, which produces electricity from converting chemical energy through a chemical action.

In giving claim 8, the broadest reasonable interpretation then one would arrive at a cell or battery being an electrochemical conversion device producing electricity from

chemical action. With this interpretation in mind, we arrive at the same definition or function of a fuel cell which is an electrochemical conversion device, which produces electricity from converting chemical energy through a chemical action.

***Claim Rejections - 35 USC § 102***

4. The text of those sections of Title 35, U.S. Code not included in this action can be found in a prior Office action.

5. Claims 1, 6, and 8 are rejected under 35 U.S.C. 102(b) as being anticipated by Deng et al. (US 5,980,977).

Regarding claims 1 and 6 (which recite identical limitations), a system, comprising: an electrode (col. 7, ll. 56-67, col. 26, ll. 41-54) including a metal oxynitride electrode catalyst comprising an oxynitride containing at least one transition metal element selected from the group consisting of La, Ta, Nb, Ti, and Zr, wherein atomic ratio of (transition metal element):(oxygen):(nitrogen) is  $(1\pm 0.1):(1\pm 0.1):(1\pm 0.1)$  (column 12, line 48 – column 13, line 3); and an acidic electrolyte contacting said metal oxynitride electrode catalyst; (col. 22, ll. 46-56), and electric power source connected to said electrode (col. 14, ll. 32-36).

The limitation "wherein said metal oxynitride electrode catalyst having an oxygen reduction catalytic activity at a potential of 0.4 V or higher relative to the reversible hydrogen electrode potential in the acidic electrolyte" is merely a functional/intended use limitation that does not structurally distinguish the claimed invention over the prior art. A recitation of the intended use of the claimed invention must result in a structural

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difference between the claimed invention and the prior art in order to patentably distinguish the claimed invention from the prior art. If the prior art structure is capable of performing the intended use, then it meets the claim. See *In re Casey*, 370 F.2d 576, 152 USPQ 235 (CCPA 1967) and *In re Otto*, 312 F.2d 937, 939, 136 USPQ 458, 459 (CCPA 1963). Moreover, it has been held that a recitation with respect to the manner in which a claimed apparatus is intended to be employed does not differentiate the claimed apparatus from a prior art apparatus satisfying the claimed structural limitations. *Ex parte Masham*, 2 USPQ2d 1647 (1987).

Therefore, the phrase "having an oxygen reduction catalytic activity at a potential of 0.4 V or higher relative to the reversible hydrogen electrode potential in the acidic electrolyte" is thus non-limiting.

The statement "A water electrolysis system" is a statement reciting the purpose or intended use of the structural limitations, and therefore do not impart patentable weight to the device above. This rationale is further support by applicant's disclosure, which states the fields of use for the invention (§ 29). See *Ex Parte Masham*, USPQ2d 1647, also MPEP 2111.02 (II).

The statement "An organic electrolysis system" is a statement reciting the purpose or intended use of the structural limitations, and therefore do not impart patentable weight to the device above. This rationale is further support by applicant's disclosure, which states the fields of use for the invention (§ 29). See *Ex Parte Masham*, USPQ2d 1647, also MPEP 2111.02 (II).

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Regarding claim 8, Deng further teaches a membrane electrolyte assembly (e.g. Figures 3-4; col. 3, ll. 22-36, col. 23, ll. 2-19); and a collector 160/160A (col. 14, ll. 32-36, col. 25, ll. 36-43) for collecting electricity, said collector being disposed on both sides of said membrane electrolyte assembly, wherein said membrane assembly comprising: an electrode (col. 7, ll. 56-67, col. 26, ll. 41-54) including a metal oxynitride electrode catalyst comprising an oxynitride containing at least one transition metal element selected from the group consisting of La, Ta, Nb, Ti, and Zr, wherein atomic ratio of (transition metal element):(oxygen):(nitrogen) is  $(1\pm 0.1):(1\pm 0.1):(1\pm 0.1)$  (column 12, line 48 – column 13, line 3); and an acidic electrolyte contacting said metal oxynitride electrode catalyst; (col. 22, ll. 46-56), and electric power source connected to said electrode (col. 14, ll. 32-36).

The limitation "wherein said metal oxynitride electrode catalyst having an oxygen reduction catalytic activity at a potential of 0.4 V or higher relative to the reversible hydrogen electrode potential in the acidic electrolyte" is merely a functional/intended use limitation that does not structurally distinguish the claimed invention over the prior art. A recitation of the intended use of the claimed invention must result in a structural difference between the claimed invention and the prior art in order to patentably distinguish the claimed invention from the prior art. If the prior art structure is capable of performing the intended use, then it meets the claim. See *In re Casey*, 370 F.2d 576, 152 USPQ 235 (CCPA 1967) and *In re Otto*, 312 F.2d 937, 939, 136 USPQ 458, 459 (CCPA 1963). Moreover, it has been held that a recitation with respect to the manner in which a claimed apparatus is intended to be employed does not differentiate the

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claimed apparatus from a prior art apparatus satisfying the claimed structural limitations.

Ex parte Masham, 2 USPQ2d 1647 (1987).

Therefore, the phrase "having an oxygen reduction catalytic activity at a potential of 0.4 V or higher relative to the reversible hydrogen electrode potential in the acidic electrolyte" is thus non-limiting.

The statement "A fuel cell" is a statement reciting the purpose or intended use of the structural limitations, and therefore do not impart patentable weight to the device above. This rationale is further support by applicant's disclosure, which states the fields of use for the invention (§ 29). *See Ex Parte Masham, USPQ2d 1647, also MPEP 2111.02 (II).*

### ***Claim Rejections - 35 USC § 103***

6. The text of those sections of Title 35, U.S. Code not included in this action can be found in a prior Office action.

7. Claims 2, 7, and 9 are rejected under 35 U.S.C. 103(a) as being unpatentable over Deng et al. (US 5,980,977) in view of Clerc et al. (US 6,190,802).

Regarding claims 2, 7, and 9 (which recite identical limitations), Deng fails to teach the metal oxynitride electrode catalyst is dispersed as fine particles on a catalyst carrier which is an electronically conductive powder.

However, Clerc teaches (col. 2, ll. 54-67, and col. 3, ll. 1-41) the metal oxynitride electrode catalyst (dopants) is dispersed as fine particles on a catalyst carrier which is an electronically conductive powder (col. 3, ll. 23-41).

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Since both Clerc and Deng teach the device above, it would have been obvious to have incorporated the above features of Clerc in Deng for the benefit of increasing the electrical conductivity of the device (col. 3, Id.).

### ***Conclusion***

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Arman Khosraviani whose telephone number is 571-272-6402. The examiner can normally be reached Monday-Friday, 8am - 5pm (Eastern Time).

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Steven Loke can be reached on 571-272-1657. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/Arman Khosraviani/

Examiner, Art Unit 2818

6/23/2009

/STEVEN LOKE/

Supervisory Patent Examiner, Art Unit 2818